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In this project General Electric (GE) develops a new mercury (Hg) control technology in which sorbent for Hg removal is produced from coal in a gasification process in-situ at coal burning plant. The main objective of this project is to obtain technical information necessary for moving the technology from pilot-scale testing to a full-scale demonstration. Goal of the program is to achieve at least 70% Hg removal above baseline at 25% or less of the cost of activated carbon injection. Gasification process for sorbent production is optimized to maximize sorbent surface area while maintaining high carbon content in the sorbent. Optimization of sorbent production has demonstrated that the optimal conditions of gasification depend on coal composition, air to fuel ratio and residence time in the gasification zone. The largest sorbent surface area of 350 m²/g was obtained at optimum conditions. Analysis of sorbent samples kept in storage for up to 40 days suggests that sorbent surface area is not affected by the shelf life.